

These Espino gauges were pulled this morning and were in the same state as the State well which were also pulled this morning. You must remember that the State well has had no flow since these gauges were run and pulled. The gauges are clean when running in. Pics show the State gauges.

Test carried out showed diesel has no effect on it. Had a sample in a spoon and heated it. The spoon got red hot before it melted.

From: George Wadsworth [mailto:gwadsworth@marquisalliance.com]
Sent: October-05-10 4:34 PM
To: Mike Smith
Subject: FW: Grease Analysis

Still working on it, so far Xylene only slightly works to disperse it. This is looking like a paraffin wax which can be very difficult to treat. You may need a hot oiler? It might be worth while getting the production chemical guys involved as well, or the stim companies as they might have more tricks up there sleeves in dealing with stuff like this. We don't think this is from the mud.

From: Stuart Dubberley
Sent: October 5, 2010 3:45 PM
To: George Wadsworth
Subject: RE: Grease Analysis

Thanks George,

This fits in with our observations:

The analysis suggests it's just a natural (high molecular weight) hydrocarbon wax - these waxes are not soluble in water and can show limited solubility in hydrocarbon solvents.

Water - Insoluble
Aqueous 35% Hydrochloric Acid Solution - Insoluble
Aqueous 10 kg/m3 sodium Hydroxide Solution - Insoluble
Aqueous 10 L/m3 T2001 Solution (demulsifier) - Insoluble
Aqueous 10 kg/m3 ChemBreak HC (oxidizing agent) - Insoluble

Neat Monoethanolamine - Preliminary Results = Insoluble (this eliminates my H2S scavenger theory)

Neat Xylene - Wax appears to disperse upon agitation (very low solubility?)

At this point it looks like a xylene treatment is the best option but this is only giving modest results - do you have time to take a look?

Stuart